4.4 DMS - Data Management Subsystem

4.4.1 Introduction

The DMS subsystem provides three main functions:

- Provide a dispersed community of science users with services to search a set of data repositories (however, the repositories themselves and their search, access, and data management functions are not part of this subsystem).
- Allow those scientists to obtain explanations for the data offered by these repositories.
- Provide data search and access gateways between ECS and external information systems.

The Data Management subsystem decouples users and programs from the location of data, the methods used by a site to access the data, and the manner in which the data have been named. The subsystem consists of four services:

- A distributed search service called the Distributed Information Manager (DIM)
- A service which acts as the gateway between the data management services used by a site and the distributed search services; the service is called the Local Information Manager (LIM)
- A Data Dictionary Service which provides data names and explanations of the data and access operations in a distributed fashion.
- A gateway that provides interoperability with non-ECS systems.

Both the DIM and the LIM accept service requests (e.g., search requests and data requests) for execution, but they do not process them directly. Rather, the DIM and the LIM act as search agents on behalf of the users, by identifying the sources of data, and by transforming the original service requests into service requests which are acceptable to these sources. Users interface with their agent DIM or LIM to determine the status of a search or obtain the search results. The users are decoupled from the actual sources, as well as from the methods which their DIM and LIM agents use to perform the searches and obtain optimal results.

Users formulate their service requests using user interface programs which are part of the Client subsystem. The user interfaces will interact with the Data Dictionary Service (often transparently to the user) to present the user with choices (e.g., of the data names applicable in a particular context) and interpret user input. Any intelligence available in the Data Dictionary about this data can be used by the user interfaces to formulate the search, e.g., to improve its accuracy. The Data Dictionary service is accessible to the components which process service requests (i.e., DIM and LIM) and the components which formulate service requests (i.e., user interface programs). As a result, a user interface can make references to data dictionary concepts which DIM and LIM can interpret. For example, a sciences user may enter search parameter names taken from a particular context (e.g., Atmospheric Dynamics). The user interface program will insert a reference to Atmospheric Dynamics into the search request. The DIM and the LIM can then interpret the parameter names in the proper context.

The SDPS Data Management architecture uses two levels of service request processing, the distribution level which is serviced by the DIM, and the site level, which is serviced by the LIM. A LIM provides an interface to a site. The inner workings of the site are hidden by its LIM, and each site can implement its own, specialized version of a LIM. DAACs and SCFs thus have the ability to decide how to best organize their data internally. On the other hand, the network needs only one type of DIM implementation, regardless of the number of LIMs. As a result, DAACs and SCFs need not be concerned about tailoring a DIM design to their requirements and implementing and maintaining DIM software.

The Gateway can be considered to be a specialized implementation of a LIM. The Gateway is intended to interface with non-ECS systems. The Gateway hides the internal design of the non-ECS system from ECS and additionally, provides translation capabilities between ECS and non-ECS formats and protocols.

Distributed search processing poses a number of difficult issues which SDPS plans to address in an evolutionary manner. SDPS will provide DIM and LIM implementations for ECS. Over time, the DIM design will be changed, e.g., to provide better optimization of distributed searches or enhanced capabilities for merging search results. Other organizations may develop their own LIM services.

The Data Management subsystem is being developed on the incremental track; therefore, the Level 4 requirements for this subsystem are draft requirements. The incremental track utilizes user feedback in the development of software components which are integrated into the formal releases. A part of this incremental track process is the refinement of these draft requirements. Final as-built requirements will be available after the increments are complete.

4.4.2 Data Management Subsystem Summary

4.4.2.1 Interfaces

A context diagram can be found in Section 3 of 305-CD-023-002. The Data Management Subsystem provides services which locate, search, and access data in a distributed fashion on behalf of a user or another program. Data management services decouple users and programs from the location of data, the methods used by a site to access the data, and the manner in which the data have been named. The subsystem interacts with other SDPS subsystems in the following manner:

- The subsystem will accept requests for Data Management Subsystem data and services from any client which can be located in any SDPS subsystem These requests are for valid lists and dependent valids, search services and access requests, subscriptions, and session management. Results returned are valids lists and dependent valids, search results, responses to access requests, notifications in response to subscriptions, and session management information.
- The subsystem analyzes the requests and eventually produces corresponding search, access, and session management requests for the data servers which manage the data collections to which the requests are routed. Data servers return results to Data Management for these requests.

- The subsystem interacts with operators (including administrators) for the operation and maintenance of Data Management hardware and software, and the maintenance of Data Management data.
- The subsystem also advertises its services with the Interoperability Subsystem. The subsystem also provides ECS valids mappings in response to requests from the Interoperability subsystem.
- Version 0 queries originating from Version 0 (V0) Clients will be sent to a V0/ECS gateway which will operate at each DAAC and emulate a Version 0 IMS. The gateway will translate an incoming request from V0 ODL into the ECS query language and submit it to the ECS system. The result will be returned to the gateway, which will then reformat it into V0 ODL structures and return it to the V0 Client. The gateway similarly accepts a V1 request to the V0 system, translates it from the ECS query language into V0 ODL, and submits it to the V0 system. The result will be returned to the gateway, which will then reformat it into ECS structures and return it to the originator.
- User Authentication requests are directed by the subsystem to the CSS. Data Management also utilizes CSS Common facilities, which include mail services and file transfer capabilities. Subscriptions are submitted to the Subscription Server and notifications are sent from the Subscription Server to Data Management.
- The subsystem provides MSS logging and resource management services status and fault information. MSS provides Data Management with life commands and requests for mode and status information.

4.4.2.2 CSCI Overview

4.4.2.2.1 LIMGR CSCI - Local Information Manager

The Local Information Manager CSCI provides the capabilities required to implement Local Information Managers (LIM) in ECS. Each LIM provides locally optimized access to logically related Data Servers. LIM services can be requested by a Distributed Information manager (DIM) or by a client directly. The LIM also provides the services needed by site administrators to integrate the Schemata of the related Data Servers into an integrated view of the data and services in the collection.

After the LIM accepts a site query or search request it acts as an agent of its requester and assumes responsibility for the execution and compilation of the results. If a request is submitted by a DIM, the LIM provides status and results back to the DIM; if submitted directly by a client, the LIM also assumes responsibility for the management of the client session.

There may be more than one LIM at a site, each of which can support different data access and query languages, different protocols, or alternative integrated Schemata. The LIM manages the integrating and formatting of partial results within a site and will supply these results to other services for integration in an overall search plan.

4.4.2.2.2 DIMGR - Distributed Information Manager CSCI

The Distributed Information Manager CSCI provide the capabilities required to implement Distributed Information Managers (DIM) in ECS. The DIM receives and coordinates requests for data and services from several loosely coupled provider sites. It provides clients with access to the following service objects: distributed query request, distributed access request, request result, client session, distributed Schema, and Local Information Manager (LIM) federation.

The DIM will accept requests to initiate, suspend, resume and terminate client sessions; manage distributed queries or access requests; inquire about the status of these requests; produce both complete and incomplete results; and update its internal Schema.

The DIM uses a Schema which is federated from Schemata at the underlying service providers (e.g., LIMs). After the DIM accepts a request from a client, it acts as an agent for that client and assumes complete responsibility for execution of the query and compilation of the results.

A DIM does not execute requests on its own, but it determines how they should be executed. This is called a distributed query plan. The plan specifies the services which the DIM must invoke, including any operations which the DIM may need to perform to combine or collate the results. The DIM will execute the plan, monitor its progress, and compile and manage the results for the requesting client. The actions of the CSCI are completely asynchronous—the client can disconnect from the DIM and reconnect later to determine the status of a query, obtain partial results, or cancel the query.

4.4.2.2.3 DDICT- Data Dictionary CSCI

The Data Dictionary CSCI manages and provides access to databases containing information about data. Each data object, data element, data relationship and access operation available through Data Servers, Local Information Managers (LIMs) and Distributed Information Managers (DIMs) are defined and described in the dictionary databases.

A user may access the Data Dictionary to get a list of Data Products defined in the dictionary together with their scientific definitions. A query program accesses the Data Dictionary service to present a user with a list of attributes available and full explanation of each attribute.

The Data Dictionary will provide three methods for organizing and presenting Data Dictionary information.

1. Data Dictionary Views restrict the access to a specific subset of the Data Dictionary information. User interface programs will typically use this type of access in a manner which is transparent to the user in order to make navigation through the Data Dictionary easier.
2. Data Dictionary Domains are hierarchies of Schema and Data Dictionary information which are analogous to the hierarchy of search and access services provided by the DIM and LIM. Each level of the Data Management subsystem is supported by Data Dictionary and Schema information consistent with the area of responsibility and degree of integration represented by that particular level.

3. Data Dictionary Contexts restrict the visibility of Data Dictionary information to a particular context. For example, "Atmospheric Dynamics" could be defined as a Data Dictionary context and then referenced by user interface programs. As a result, when the user references a name or browse in the Data Dictionary, only those names defined in the context of Atmospheric Dynamics would be visible.

Data administrators can define objects, attributes and operations in the Data Dictionary during the planning and design stages for Data Servers, LIMs and DIMs. The tools which are used to create data Schemata for a Data Server and LIM will also verify that all elements in the schemata (object types, attributes, operations) have been defined and will prompt the administrators for additions or corrections if they are not. They will then update the Data Dictionary automatically from these inputs, converting Schema information into a Data Dictionary input in the process.

4.4.2.2.4 GTWAY- Version 0 Interoperability CSCI

The Version 0 Interoperability CSCI provides a bi-directional gateway between ECS and the Version 0 System. The CSCI enables V0 IMS users to query ECS databases, and enables users of the ECS Client Subsystem to query Version 0 databases.

4.4.3 Requirements Table

The following table lists all DMS L4 requirements for Release A & B in numerical order together with their RbR parent requirements.

Data Management Subsystem L4 to RbR traceability (1 of 116)

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00010	B	The LIMGR CI shall provide capabilities to search and obtain data by science discipline.	IMS-0030#B	The IMS shall provide from each ECS access node, access to the full range of services spanning the whole of ECS, including data and services available from all DAACs without requiring that the user know the physical location of the data.
S-DMS-00020	B	The LIMGR CI shall accept Search Requests in a format compatible with the Earth Science Query Language.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0650#B	The IMS shall query non-geographic metadata by any of the following criteria at a minimum: a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above
			IMS-0630#B	The IMS shall provide the capability to select metadata for retrieval by: a. Boolean operators b. Relational operators c. Attribute values d. Search strings e. Combinations thereof
S-DMS-00030	B	The LIMGR CI shall create an integrated schema from the exported schematas of the Data Servers.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00040	B	The LIMGR CI shall determine which Data Servers are required in order to perform a Search Request and build a Site Query Plan as a result.	IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
			IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00050	B	The LIMGR CI shall initiate data provider data access and manipulation operations.	IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
			IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00060	B	The LIMGR CI shall provide the capability to establish a session as the context for a series of Service Requests.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00070	B	The LIMGR CI shall provide the capability to suspend an ongoing t session-.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00080	B	The LIMGR CI shall provide the capability to resume a suspended session.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00090	B	The LIMGR CI shall provide the capability to terminate an established client session.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00100	B	The LIMGR CI shall accept search results from a Data Server, and provide capability, to integrate Search Results from a previous Search Request .	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00110	B	The LIMGR CI shall provide the capability to save the result of a Service Request for later reuse.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00115	B	The LIMGR CI shall support search requests against result sets from previous searches within the same session.	IMS-0570#B	The IMS shall provide an incremental search capability.
S-DMS-00120	B	The LIMGR CI shall, upon request, provide the current Result Set (complete or incomplete) to the client or specified destination.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00130	B	The LIMGR CI 4shall provide the capability, to terminate processing of an active or suspended Service Request.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00140	B	The LIMGR CI shall provide the capability, to suspend processing of an active Service Request.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00150	B	The LIMGR CI shall provide the capability, to resume processing of a previously suspended Service Request.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00160	B	The LIMGR CI shall provide the capability, to estimate the resources required to execute a pending Service Request.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00180	B	The LIMGR CI shall support interactive information management capabilities for administrators to retrieve information.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
			IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
S-DMS-00190	B	The LIMGR CI shall use the identification of the user on whose behalf a Service Request is issued as the basis for access control decisions.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
S-DMS-00200	B	The LIMGR CI shall forward the identification of the user on whose behalf a Service Request is issued to Data Servers for Service Requests issued on the behalf of the user.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
S-DMS-00210	B	The LIMGR CI internal data base management shall be expressed in a <TBD> standard query language	IMS-0290#B	IMS internal data base management queries shall be expressed in a standard query language.
S-DMS-00220	B	The LIMGR CI shall store, maintain and provide data management services for ECS local Schema.	IMS-0220#B	The IMS shall store, maintain and provide data management services for ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases.
S-DMS-00230	B	The LIMGR CI shall provide the capability to integrate partial results within those Data Servers represented in its local Schema.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-00240	B	In the case of processing failures, upon restart the LIMGR CI shall complete all incomplete transactions without loss of data.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
S-DMS-00250	B	The LIMGR CI shall maintain query log files.	IMS-0665#B	The IMS shall provide informational messages to indicate that a query is being executed, and shall provide the capability for the user to abort any time-intensive operations.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00260	B	The LIMGR CI shall provide a capability to report status of Service Requests submitted to it.	IMS-1300#B	The IMS shall be capable of responding to user inquiries for status of user-nitiated requests, and user request history.
S-DMS-00270	B	The LIMGR CI shall support revisions of its local Schema following Schema changes in the Data Servers represented in the LIMs local Schema.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
			IMS-0355#B	The metadata shall be expandable to include additional attributes which are identified during the mission and deemed useful for data search.
			IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information
S-DMS-00280	B	The LIMGR CI shall provide a data administration utility for adding, deleting, modifying, and expanding individual Schema.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
			IMS-0355#B	The metadata shall be expandable to include additional attributes which are identified during the mission and deemed useful for data search.
			IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information
S-DMS-00290	B	The LIMGR CI shall accept Service Requests, and provide capability, to find and retrieve a Schema entry from an integrated Schema.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00300	B	The LIMGR CI shall provide the capability to search for Data Granules of EOSDIS data stored for all Data Servers represented in their local Schema.	IMS-0610#B	The IMS shall provide the capability to search the data inventory which describes each granule of EOSDIS data.
S-DMS-00470	B	The LIMGR CI shall support the interruption of any database administrative or maintenance activity and its restart without loss of information.	IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information
S-DMS-00480	B	The LIMGR CI shall contribute to supporting the response time defined in Appendix E (Section E.7, Table E-8) of the current version of 304-CD-005, for a single instrument inventory search consisting of multiple keyword attributes with time range check.	IMS-1780#B	The IMS shall respond to each user session operation within the time period specified in Table 7-4 with the specified rate of IMS operations.
			IMS-1785#B	The IMS performance specified in Table 7-4 shall be maintained during other IMS operational activities such as database updates from the DADS.
S-DMS-00490	B	The LIMGR CI shall contribute to supporting the response time defined in Appendix E (Section E.7, Table E-8) of the current version of 304-CD-005, for a multiple instrument inventory search consisting of multiple keyword attributes with time range check.	IMS-1780#B	The IMS shall respond to each user session operation within the time period specified in Table 7-4 with the specified rate of IMS operations.
S-DMS-00500	B	The LIMGR CI shall contribute to supporting the response time defined in Appendix E (Section E.7, Table E-8) of the current version of 304-CD-005, in accepting from Data Servers a single instrument inventory result set consisting of multiple keyword attributes with special range check, integrating the results, and providing a complete result set.	IMS-1780#B	The IMS shall respond to each user session operation within the time period specified in Table 7-4 with the specified rate of IMS operations.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00510	B	The LIMGR CI shall contribute to supporting the response time defined in Appendix E (Section E.7, Table E-8) of the current version of 304-CD-005, in accepting from Data Servers a multiple instrument inventory result set consisting of multiple keyword attributes with time range check, integrating the results, and providing a complete result set.	IMS-1780#B	The IMS shall respond to each user session operation within the time period specified in Table 7-4 with the specified rate of IMS operations.
S-DMS-00520	B	The LIMGR CI shall send detected hardware and software fault information to MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
			IMS-1760#B	The IMS shall send detected hardware faults to the SMC, to include at a minimum: a. IMS processors b. IMS network interfaces c. Storage devices
S-DMS-00530	B	The LIMGR CI shall collect Security Management Data (such as rejected access to a service) and provide it to the MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
			EOSD2400#B	ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.
S-DMS-00540	B	The LIMGR CI data accesses shall be subject to read access controls based on data types, user privileges, and data ownership.	EOSD2400#B	ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
			IMS-0350#B	The IMS shall provide the capability for authorized personnel to add, delete, or modify ECS metadata entries, individually or in groups.
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
S-DMS-00550	B	The LIMGR CI shall provide a capability to decompose the Search Requests it receives into executable data base Queries.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-00560	B	The LIMGR CI shall provide the capability to manually abort any time-intensive operations.	IMS-0665#B	The IMS shall provide informational messages to indicate that a query is being executed, and shall provide the capability for the user to abort any time-intensive operations.
S-DMS-00565	B	The LIMGR CI shall be available 24 hours a day, 7 days a week within the constraints of the RMA requirements.	IMS-0010#B	The IMS shall be capable of providing 24 hour per day, 7 day per week access to the ECS services.
S-DMS-00570	B	The LIMGR CI shall provide integration, testing, and simulation status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00580	B	The LIMGR CI shall provide maintenance status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-00590	B	The LIMGR CI shall provide logistics status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-00600	B	The LIMGR CI shall provide training information to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-00605	B	The LIMGR CI shall provide operations staff with the capability to generate daily LIMGR operations summary reports.	IMS-1700#B	The IMS shall provide the capability to generate reports on: a. The backlog of data distribution requests b. The backlog of processing requests c. The backlog of data acquisition requests d. Data quality assessment e. Daily IMS operations summaries f. IMS performance summaries
S-DMS-00606	B	The LIMGR CI shall provide operations staff with the capability to generate LIMGR performance summary reports.	IMS-1700#B	The IMS shall provide the capability to generate reports on: a. The backlog of data distribution requests b. The backlog of processing requests c. The backlog of data acquisition requests d. Data quality assessment e. Daily IMS operations summaries f. IMS performance summaries
S-DMS-00610	B	The LIMGR CI operations staff shall have the capability to receive maintenance directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-00620	B	The LIMGR CI operations staff shall have the capability to receive directives for integration, testing, and simulation from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-00630	B	The LIMGR CI operations staff shall have the capability to receive configuration management directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-00640	B	The LIMGR CI operations staff shall have the capability to receive logistics management directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-00650	B	The LIMGR CI operations staff shall have the capability to receive fault management directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-00660	B	The LIMGR CI operations staff shall have the capability to receive security directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-00670	B	The LIMGR CI operations staff shall have the capability to receive training management directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-00690	B	The LIMGR CI shall provide configuration management data such as software versions to MSS through the use of managed process framework.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-00700	B	The LIMGR CI shall support the MSS in collecting Accounting Management Data by supplying resource utilization data.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-00705	B	The LIMGR CI shall support operations staff in the creation of utilization reports, and the operations staff shall distribute them on a periodic basis to a predefined list of report recipients.	IMS-1680#B	The IMS status monitoring function shall provide the capability to distribute reports on a periodic basis to a predefined list of report recipients.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00706	B	The LIMGR CI shall provide operations staff the capability to distribute utilization reports electronically, in hard copy, or on electronic media.	IMS-1690#B	The IMS status monitoring function shall provide the capability to disseminate reports on-line electronically and off-line on either paper or electronic media.
S-DMS-00710	B	The LIMGR CI shall report Accountability Management Data (requests such as searches, browse requests, orders) to the MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-00720	B	The LIMGR CI shall collect Performance Management Data using the MSS managed object components and provide it to the MSS at configurable intervals and on demand.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-00730	B	The LIMGR CI shall provide to MSS configuration information such as number of expected daily sessions, which will be used by MSS to compare plans to actuals (i.e. schedule management).	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-00740	B	PThe LIMGR CI shall provide partial results upon request which consists of the results from the start of the request or since the last request for results.	IMS-0665#B	The IMS shall provide informational messages to indicate that a query is being executed, and shall provide the capability for the user to abort any time-intensive operations.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00750	B	The LIMGR CI shall have the capability of creating, editing and deleting advertisements about itself and submitting them to the Advertising Service.	IMS-0030#B	The IMS shall provide from each ECS access node, access to the full range of services spanning the whole of ECS, including data and services available from all DAACs without requiring that the user know the physical location of the data.
			IMS-0220#B	The IMS shall store, maintain and provide data management services for ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases.
			IMS-0360#B	The IMS shall maintain or provide access to an on-line Earth Science master directory of information, which may be geographically distributed, that describes whole data sets in the Earth science disciplines.
			IMS-0390#B	The IMS shall maintain or provide access to directory entries for all data sets accessible through the IMS search and order service.
S-DMS-00860	B	The LIMGR CI shall provide a capability to report the status of sessions established by it.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-00890	B	The LIMGR CI shall support multiple concurrent sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-00895	B	The LIMGR CI shall support multiple service requests within a session.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-00900	B	The LIMGR CI shall provide an application program interface for the submission of Service Requests.	EOSD5210#B	ECS shall enable development of a local user interface that accesses the core metadata and browse data base servers, bypassing the delivered "core" user interface. This server interface shall be configuration controlled and documented for the programmers' use.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-1765#B	The IMS shall be developed with configuration-controlled application programming interfaces (APIs) that will be capable of supporting development of the following extensions to the ECS IMS by the DAACs, ECS and other users: a. Addition of metadata fields that are unique to the data maintained at a specific DAAC b. Addition of documents for use as guide metadata for DAAC-specific data products c. Development of DAAC-specific data acquisition request utilities d. Support of data visualization utilities for DAAC-specific products e. Support of DAAC-specific data analysis utilities f. Development of DAAC-unique metadata search and access services that will operate independent of the delivered ECS IMS services g. Development of a local user interface that can bypass the delivered ECS user interface for accessing DAAC-unique metadata search and access services
S-DMS-00910	B	The LIMGR CI shall provide an application program interface for the submission of requests for administrative services.	IMS-1765#B	The IMS shall be developed with configuration-controlled application programming interfaces (APIs) that will be capable of supporting development of the following extensions to the ECS IMS by the DAACs, ECS and other users: a. Addition of metadata fields that are unique to the data maintained at a specific DAAC b. Addition of documents for use as guide metadata for DAAC-specific data products c. Development of DAAC-specific data acquisition request utilities d. Support of data visualization utilities for DAAC-specific products e. Support of DAAC-specific data analysis utilities f. Development of DAAC-unique metadata search and access services that will operate independent of the delivered ECS IMS services g. Development of a local user interface that can bypass the delivered ECS user interface for accessing DAAC-unique metadata search and access services
S-DMS-00912	B	The LIMGR CI shall log the startup of the LIMGR servers to MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-00913	B	The LIMGR CI shall log the shutdown of the LIMGR servers to MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00915	B	The LIMGR CI shall log the initiation of a session.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-00920	B	The LIMGR CI shall log the termination of a session.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-00930	B	The LIMGR CI shall log the suspension of a session.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-00940	B	The LIMGR CI shall log the resumption of previously suspended sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-00960	B	The LIMGR CI shall provide the capability for the operations staff to suspend all active sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-00970	B	The LIMGR CI shall provide the capability for the operations staff to resume any or all sessions, previously suspended by operations staff or clients.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-00980	B	The LIMGR CI shall provide the capability for the operations staff to terminate any or all active or suspended sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-00990	B	The LIMGR CI shall send Notifications to users via email in the event that a users's request or session is canceled by operations staff.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-01000	B	The LIMGR CI shall provide the capability to restore a session after interruption.	IMS-0120#B	The IMS shall provide, dependent upon the user's display device capabilities, a user-friendly interface with the following features at a minimum: a. Multiple window display b. Buttons and pull down menus c. Valid lists for all variables d. An information base of associations between variables (e.g., between instruments and geophysical parameters) e. Ability to restore a session after interruption f. Context-sensitive help g. Minimal and consistent use of non-standard keys h. Random movement through fields i. Capability to save and restore the contents of a menu or form j. Standardized use of commands and terminology across screens k. Self-explanatory, meaningful error messages l. Automatic acronym expansion, which can be enabled and disabled interactively m. Availability of a menu tree diagram n. Command language
S-DMS-01010	B	The LIMGR CI shall log to MSS all Service requests initiated during a session.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-01011	B	The LIMGR CI shall log to MSS when a service request is activated from the queue.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-01012	B	The LIMGR CI shall log to MSS when a service request has been successfully decomposed into its component requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-01013	B	The LIMGR CI shall log to MSS when the component service request has been submitted to the external entity (e.g. GTWAY, SDSRV).	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-01014	B	The LIMGR CI shall log to MSS when the request to the external entity (e.g. GTWAY, SDSRV) has been successfully returned.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-01015	B	The LIMGR CI shall log to MSS when the results of the external requests have been integrated and status is about to be sent to the client program.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-01016	B	The LIMGR CI shall log to MSS when an external connection (i.e. to GTWAY or SDSRV) has been established.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-01017	B	The LIMGR CI shall log the successfull completion of each service request to MSS.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-01020	B	The LIMGR CI shall log the suspension of processing of Service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-01030	B	The LIMGR CI shall log the resumption of previously suspended Service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-01040	B	The LIMGR CI shall log the termination of service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-01050	B	The LIMGR CI shall ensure that databases which are distributed and replicated provide synchronized data.	IMS-0220#B	The IMS shall store, maintain and provide data management services for ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-01060	B	The LIMGR CI shall forward commands to terminate a session to all servers which are a part of that session.	IMS-1520#B	The IMS toolkit software shall provide data visualization tools to assist the investigators to perform the following functions, at a minimum: a. QA/Validation of products generated by the PGS b. Algorithm development c. Calibration functions, parameter verification, and anomaly detection d. View subsetted, subsampled, and summarized data whenever associated inventory information is displayed
S-DMS-01070	B	The LIMGR CI shall accept Subscriptions for LIM data.	IMS-0670#B	The IMS shall provide the capability to accept, validate, and fill orders from users for periodic delivery of information stored at the IMS.
S-DMS-01075	B	The LIMGR CI shall accept and process lifecycle commands from the MSS.	SMC-3300#B	The SMC shall monitor site and element hardware, and scientific and system software status to determine their operational states including, at a minimum: a. On-line b. Failed c. In maintenance d. In test mode e. In simulation mode
S-DMS-01080	B	The LIMGR CI shall provide a capability to display SMC directives to operator personnel.	IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-10010	B	The DIMGR CI shall provide capabilities to search and obtain data across DAACs.	IMS-0030#B	The IMS shall provide from each ECS access node, access to the full range of services spanning the whole of ECS, including data and services available from all DAACs without requiring that the user know the physical location of the data.
			IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0870#B	The IMS shall provide access in accordance with MOUs to ADC and ODC data that a. Has been generated by ADC and ODC data systems b. Is stored by ADC and ODC archives and requested by EOSDIS users c. Is required as ancillary data for production processing
			EOSD5100#B	ECS shall enable evolution of ECS to be a federated unit within GCDIS, e.g. GCDIS data centers should not have to negotiate different interfaces with each DAAC.
S-DMS-10020	B	The DIMGR CI shall accept and execute Search Requests which require searching across DAACs.	EOSD5100#B	ECS shall enable evolution of ECS to be a federated unit within GCDIS, e.g. GCDIS data centers should not have to negotiate different interfaces with each DAAC.
			IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
			IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-10030	B	The DIMGR CI shall compare received Search Requests to its federated Schema to determine to which LIMs or Data Servers the Search Request must be forwarded and generate a Distributed Query Plan.	IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
			IMS-0790#B	The IMS shall determine the location of requested data products and submit the product order to the data center where the data are archived.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
			IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10040	B	Upon determining which LIMs are required to complete a Search Request, the DIMGR CI shall send to the requisite LIMs the portions of the original Search Request which apply to them.	IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10050	B	The DIMGR CI shall monitor the progress of the Distributed Query Plan.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-10060	B	The DIMGR CI shall compile and manage the results of the Distributed Query Plan for the client which initiated it.	IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
			IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-10070	B	The DIMGR CI shall execute, monitor, and compile plan results without continuous connection with the client this capability shall allow the client to disconnect from and later reconnect to the DIM to retrieve the results.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-10090	B	The DIMGR CI shall store, maintain and provide data management services for ECS federated Schema.	IMS-0220#B	The IMS shall store, maintain and provide data management services for ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases.
S-DMS-10100	B	The DIMGR CI shall provide the capability to abort any time-intensive operations.	IMS-0665#B	The IMS shall provide informational messages to indicate that a query is being executed, and shall provide the capability for the user to abort any time-intensive operations.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10110	B	The DIMGR CI shall provide the capability to integrate partial results from those LIMs represented in its federated Schema into a complete Result Set.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-10115	B	The DIMGR CI shall support search requests against result sets from previous searches within the same session.	IMS-0570#B	The IMS shall provide an incremental search capability.
S-DMS-10120	B	In the case of processing failures, upon restart the DIMGR CI shall complete all incomplete transactions without loss of data.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
			IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information
S-DMS-10130	B	The DIMGR CI shall maintain query log files.	IMS-0665#B	The IMS shall provide informational messages to indicate that a query is being executed, and shall provide the capability for the user to abort any time-intensive operations.
S-DMS-10140	B	The DIMGR CI shall provide a capability to report status of Search Requests submitted to it.	IMS-1300#B	The IMS shall be capable of responding to user inquiries for status of user-initiated requests, and user request history.
S-DMS-10150	B	The DIMGR CI shall support revisions of its federated Schema following Schema changes in the LIMs represented in the DIM's federated Schema.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for:a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information
			IMS-0355#B	The metadata shall be expandable to include additional attributes which are identified during the mission and deemed useful for data search.
S-DMS-10160	B	The DIMGR CI shall be able to receive the local Schema of LIMs in its federation from the LIM service.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10170	B	The DIMGR CI shall create a union of the Schemata it receives from LIMs in its federation. This union is a federated Schema.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10180	B	The DIMGR CI shall not alter the Schemata it receives from any LIM in creating the federated Schema.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10190	B	The DIMGR CI shall subscribe to the LIMs for any changes in LIM Schemata.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10200	B	The DIMGR CI shall subscribe to the Advertising service for any additions or deletions of LIMs from its federation.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10210	B	The DIMGR CI shall be able to add a LIM to its federation based on the subscription notifications it receives from the Adsvertising service..	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10220	B	The DIMGR CI shall provide an interface whereby a LIM may be deleted from the federation based on the subscription notifications it receives from the Adsvertising service..	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10240	B	The DIMGR CI shall provide a data administration utility for adding, deleting, modifying, and expanding an individual Schema.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
			IMS-0355#B	The metadata shall be expandable to include additional attributes which are identified during the mission and deemed useful for data search.
			IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information
S-DMS-10250	B	The distributed Schema administrator shall maintain the federated Schema in the DIM.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10260	B	The DIMGR CI shall provide an interface to the DIM administrator client whereby a LIM may be added to the federation.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10270	B	The DIMGR CI shall provide an interface to the DIM administrator client whereby a LIM may be deleted from the federation.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10280	B	The DIMGR CI shall provide an interface to the DIM administrator client whereby a LIM may be replaced in the federation.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10290	B	The DIMGR CI shall provide an interface to the DIM administrator client whereby LIM information may be retrieved from the federation.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10300	B	The DIMGR CI shall provide the capability to find and retrieve a Schema entry from an distributed Schema.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10310	B	The DIMGR CI shall provide the capability to search for Data Granules of EOSDIS data stored across DAACs for specific science disciplines.	IMS-0610#B	The IMS shall provide the capability to search the data inventory which describes each granule of EOSDIS data.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10320	B	The DIMGR CI shall provide Service Request Status in response to Status Requests.	IMS-1300#B	The IMS shall be capable of responding to user inquiries for status of user-initiated requests, and user request history.
S-DMS-10330	B	The DIMGR CI shall use the User Identifier for the user on whose behalf a Service Request is issued as the basis for access control decisions.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
S-DMS-10340	B	The DIMGR CI shall forward the user's User Identifer in any Service Requests that it sends to the LIMGR CI on behalf of that user..	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
S-DMS-10345	B	The DIMGR CI shall be available 24 hours a day, 7 days a week within the constraints of the RMA requirements.	IMS-0010#B	The IMS shall be capable of providing 24 hour per day, 7 day per week access to the ECS services.
S-DMS-10350	B	The DIMGR CI shall provide integration, testing, and simulation status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-10360	B	The DIMGR CI shall provide maintenance status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10370	B	The DIMGR CI shall provide logistics status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-10380	B	The DIMGR CI shall provide training information to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-10385	B	The DIMGR CI shall provide operations staff with the capability to generate daily DIMGR operations summary reports.	IMS-1700#B	The IMS shall provide the capability to generate reports on: a. The backlog of data distribution requests b. The backlog of processing requests c. The backlog of data acquisition requests d. Data quality assessment e. Daily IMS operations summaries f. IMS performance summaries
S-DMS-10386	B	The DIMGR CI shall provide operations staff with the capability to generate DIMGR performance summary reports.	IMS-1700#B	The IMS shall provide the capability to generate reports on: a. The backlog of data distribution requests b. The backlog of processing requests c. The backlog of data acquisition requests d. Data quality assessment e. Daily IMS operations summaries f. IMS performance summaries
S-DMS-10390	B	The DIMGR CI shall provide the capability to receive maintenance directives from the SMC.	IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
			SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10400	B	The DIMGR CI shall provide the capability to receive, directives for integration, testing, and simulation from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-10410	B	The DIMGR CI shall provide the capability to receive, configuration management directives from the SMC.	IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
			SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
S-DMS-10420	B	The DIMGR CI shall provide the capability to receive logistics management directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10430	B	The DIMGR CI shall provide the capability to receive fault management directives from the SMC.	IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
			SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
S-DMS-10440	B	The DIMGR CI shall provide the capability to receive security directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-10450	B	The DIMGR CI shall provide the capability to receive training management directives from the SMC.	IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
			SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10460	B	The DIMGR CI shall support the interruption of a database administrative or maintenance activity and its restart without loss of information.	IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information
S-DMS-10470	B	The DIMGR CI shall contribute to supporting the response time defined in Appendix E (Section E.7, Table E-8) of the current version of 304-CD-005, in accepting processing, and distributing to the LIMs multiple DAAC, single instrument inventory search consisting of multiple keyword attributes with special range check.	IMS-1780#B	The IMS shall respond to each user session operation within the time period specified in Table 7-4 with the specified rate of IMS operations.
S-DMS-10480	B	The DIMGR CI shall contribute to supporting the response time defined in Appendix E (Section E.7, Table E-8) of the current version of 304-CD-005, in accepting, processing, and distributing to LIMs a multiple DAAC, multiple instrument inventory search consisting of multiple keyword attributes with time range check.	IMS-1780#B	The IMS shall respond to each user session operation within the time period specified in Table 7-4 with the specified rate of IMS operations.
S-DMS-10490	B	The DIMGR CI shall contribute to supporting the response time defined in Appendix E (Section E.7, Table E-8) of the current version of 304-CD-005, in accepting from LIMs a multiple DAAC, single instrument Inventory result set consisting of multiple keyword attributes with spacial range check , integrate the results, and providing a complete result set.	IMS-1780#B	The IMS shall respond to each user session operation within the time period specified in Table 7-4 with the specified rate of IMS operations.
S-DMS-10500	B	The DIMGR CI shall contribute to supporting the response time defined in Appendix E (Section E.7, Table E-8) of the current version of 304-CD-005, in accepting from LIMs multiple DAAC, multiple instrument Inventory result set consisting of multiple keyword attributes with time range check , integrate the results, and providing a complete result set.	IMS-1780#B	The IMS shall respond to each user session operation within the time period specified in Table 7-4 with the specified rate of IMS operations.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10530	B	The DIMGR CI shall send detected hardware and software fault information to MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
			IMS-1760#B	The IMS shall send detected hardware faults to the SMC, to include at a minimum: a. IMS processors b. IMS network interfaces c. Storage devices
S-DMS-10540	B	The DIMGR CI shall provide configuration management data such as software versions to MSS through managed process framework.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-10550	B	The DIMGR CI shall support the MSS in collecting Accounting Management Data by supplying resource utilization data.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10555	B	The DIMGR CI shall support operations staff in the creation of utilization reports, and the operations staff shall distribute them on a periodic basis to a predefined list of report recipients.	IMS-1680#B	The IMS status monitoring function shall provide the capability to distribute reports on a periodic basis to a predefined list of report recipients.
S-DMS-10556	B	The DIMGR CI shall provide operations staff with the capability to distribute DIMGR CI utilization reports eletronically or in hard copy or on electronic media.	IMS-1690#B	The IMS status monitoring function shall provide the capability to disseminate reports on-line electronically and off-line on either paper or electronic media.
S-DMS-10560	B	The DIMGR CI shall report Accountability Management Data (requests such as searches, browse requests, orders) to the MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-10570	B	The DIMGR CI shall collect Performance Management Data using the MSS managed object components and provide it to the MSS at configurable intervals and on demand.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-10580	B	The DIMGR CI shall collect Security Management Data (such as rejected access to a service) and provide it to the MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10590	B	The DIMGR CI shall provide to MSS configuration information such as number of expected daily sessions, which will be used by MSS to compare plans to actuals (i.e. schedule management).	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-10595	B	The DIMGR CI shall log the startup of the DIMGR servers to MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-10596	B	The DIMGR CI shall log the shutdown of the DIMGR servers to MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-10600	B	The DIMGR CI data accesses shall be subject to read access control based on user privileges.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
			IMS-0350#B	The IMS shall provide the capability for authorized personnel to add, delete, or modify ECS metadata entries, individually or in groups.
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10610	B	The DIMGR CI internal data base management Queries shall be expressed in a <TBD> query language	IMS-0290#B	IMS internal data base management queries shall be expressed in a standard query language.
S-DMS-10650	B	The DIMGR CI shall initiate distributed data access and manipulation operations.	IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
			IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			EOSD5100#B	ECS shall enable evolution of ECS to be a federated unit within GCDIS, e.g. GCDIS data centers should not have to negotiate different interfaces with each DAAC.
S-DMS-10660	B	The DIMGR CI shall provide the capability establish a session as the context for a series of Service Requests.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10670	B	The DIMGR CI shall provide the capability to suspend an ongoing session.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10680	B	The DIMGR CI shall provide the capability to resume a suspended session.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10690	B	The DIMGR CI shall provide the capability to terminate an established client session.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10700	B	The DIMGR CI shall provide the capability to save the result of a Service Request for later reuse.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10710	B	The DIMGR CI shall, upon request, provide the current Result Set (complete or incomplete) to the client or specified destination.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10720	B	The DIMGR CI shall provide the capability, to terminate processing of an active or suspended Service Request.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10730	B	The DIMGR CI shall provide the capability, to suspend processing of an active Service Request.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10740	B	The DIMGR CI shall provide the capability, to resume processing of a previously suspended Service Request.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10750	B	The DIMGR CI shall provide the capability to estimate resources required to execute a pending Service Request.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-10760	B	The DIMGR CI shall provide partial results upon request which consists of the results from the start of the request or since the last request for results.	IMS-0665#B	The IMS shall provide informational messages to indicate that a query is being executed, and shall provide the capability for the user to abort any time-intensive operations.
S-DMS-10765	B	The DIMGR CI shall accept searches in the Earth Science Query Language.	IMS-0630#B	The IMS shall provide the capability to select metadata for retrieval by: a. Boolean operators b. Relational operators c. Attribute values d. Search strings e. Combinations thereof
			IMS-0650#B	The IMS shall query non-geographic metadata by any of the following criteria at a minimum: a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above
S-DMS-10770	B	The Earth Science Query Language shall support the specification of search conditions using search expressions in combination with boolean and relational operators.	IMS-0630#B	The IMS shall provide the capability to select metadata for retrieval by: a. Boolean operators b. Relational operators c. Attribute values d. Search strings e. Combinations thereof

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10771	B	The Earth Science Query Language shall support the specification of search expressions using the attribute names and exact word matches for string attributes associated with non-geographic metadata.	IMS-0630#B	The IMS shall provide the capability to select metadata for retrieval by: a. Boolean operators b. Relational operators c. Attribute values d. Search strings e. Combinations thereof
			IMS-0650#B	The IMS shall query non-geographic metadata by any of the following criteria at a minimum: a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above
S-DMS-10772	B	The Earth Science Query Language shall support the specification of search expressions using the attribute names and phrase matches for string attributes associated with non-geographic metadata.	IMS-0650#B	The IMS shall query non-geographic metadata by any of the following criteria at a minimum: a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above
S-DMS-10773	B	The Earth Science Query Language shall support the specification of search expressions using the attribute names and character sets for string attributes associated with non-geographic metadata.	IMS-0650#B	The IMS shall query non-geographic metadata by any of the following criteria at a minimum: a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10774	B	The Earth Science Query Language shall support the specification of search expressions using the attribute names and wildcard constructs for string attributes associated with non-geographic metadata.	IMS-0650#B	The IMS shall query non-geographic metadata by any of the following criteria at a minimum: a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above
S-DMS-10775	B	The Earth Science Query Language shall support the specification of search expressions using the attribute names and character ranges for string attributes associated with non-geographic metadata.	IMS-0650#B	The IMS shall query non-geographic metadata by any of the following criteria at a minimum: a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above
S-DMS-10776	B	The Earth Science Query Language shall support the specification of search expressions using the attribute names and minimum and maximum range for numeric and date/time attributes associated with non-geographic metadata.	IMS-0650#B	The IMS shall query non-geographic metadata by any of the following criteria at a minimum: a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above
S-DMS-10860	B	The DIMGR CI shall provide a capability to report the status of sessions established by it.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10890	B	The DIMGR CI shall support multiple concurrent sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-10895	B	The DIMGR CI shall support multiple service requests within a session.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-10900	B	The DIMGR CI shall provide an application program interface for the submission of Service Requests.	EOSD5210#B	ECS shall enable development of a local user interface that accesses the core metadata and browse data base servers, bypassing the delivered "core" user interface. This server interface shall be configuration controlled and documented for the programmers' use.
			IMS-1765#B	The IMS shall be developed with configuration-controlled application programming interfaces (APIs) that will be capable of supporting development of the following extensions to the ECS IMS by the DAACs, ECS and other users: a. Addition of metadata fields that are unique to the data maintained at a specific DAAC b. Addition of documents for use as guide metadata for DAAC-specific data products c. Development of DAAC-specific data acquisition request utilities d. Support of data visualization utilities for DAAC-specific products e. Support of DAAC-specific data analysis utilities f. Development of DAAC-unique metadata search and access services that will operate independent of the delivered ECS IMS services g. Development of a local user interface that can bypass the delivered ECS user interface for accessing DAAC-unique metadata search and access services

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10910	B	The DIMGR CI shall provide an application program interface for the submission of requests for administrative services.	IMS-1765#B	The IMS shall be developed with configuration-controlled application programming interfaces (APIs) that will be capable of supporting development of the following extensions to the ECS IMS by the DAACs, ECS and other users: a. Addition of metadata fields that are unique to the data maintained at a specific DAAC b. Addition of documents for use as guide metadata for DAAC-specific data products c. Development of DAAC-specific data acquisition request utilities d. Support of data visualization utilities for DAAC-specific products e. Support of DAAC-specific data analysis utilities f. Development of DAAC-unique metadata search and access services that will operate independent of the delivered ECS IMS services g. Development of a local user interface that can bypass the delivered ECS user interface for accessing DAAC-unique metadata search and access services
S-DMS-10915	B	The DIMGR CI shall log the initiation of a session.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-10920	B	The DIMGR CI shall log the termination of a session.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10930	B	The DIMGR CI shall log the suspension of a session.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-10940	B	The DIMGR CI shall log the resumption of previously suspended sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-10960	B	The DIMGR CI shall provide the capability for the operations staff to suspend all active sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-10970	B	The DIMGR CI shall provide the capability for the operations staff to resume any or all sessions, previously suspended by operations staff or clients.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-10980	B	The DIMGR CI shall provide the capability for the operations staff to terminate any or all active or suspended sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-10990	B	The DIMGR CI shall send Notifications to users via email in the event that a users's request or session is canceled by operations staff.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-11000	B	The DIMGR CI shall provide the capability to restore a session after interruption.	IMS-0120#B	The IMS shall provide, dependent upon the user's display device capabilities, a user-friendly interface with the following features at a minimum: a. Multiple window display b. Buttons and pull down menus c. Valid lists for all variables d. An information base of associations between variables (e.g., between instruments and geophysical parameters) e. Ability to restore a session after interruption f. Context-sensitive help g. Minimal and consistent use of non-standard keys h. Random movement through fields i. Capability to save and restore the contents of a menu or form j. Standardized use of commands and terminology across screens k. Self-explanatory, meaningful error messages l. Automatic acronym expansion, which can be enabled and disabled interactively m. Availability of a menu tree diagram n. Command language
S-DMS-11010	B	The DIMGR CI shall log to MSS all Service requests initiated during a session.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1665#B	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-11011	B	The DIMGR CI shall log the successful completion of each service request to MSS.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-11012	B	The DIMGR CI shall log to MSS when a service request is activated from the queue.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-11013	B	The DIMGR CI shall log to MSS when a service request has been successfully decomposed into its component requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-11014	B	The DIMGR CI shall log to MSS when an external connection (i.e. to LIMGR, GTWAY or SDSRV) has been established.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-11015	B	The DIMGR CI shall log to MSS when the component service request has been submitted to the external entity (e.g. LIMGR, GTWAY, SDSRV).	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-11016	B	The DIMGR CI shall log to MSS when the request to the external entity (e.g. LIMGR, GTWAY, SDSRV) has been successfully returned.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-11017	B	The DIMGR CI shall log to MSS when the results of the external requests have been integrated and status is about to be sent to the client program.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-11020	B	The DIMGR CI shall log the suspension of processing of Service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1665#B	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.
S-DMS-11030	B	The DIMGR CI shall log the resumption of previously suspended Service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1665#B	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.
S-DMS-11040	B	The DIMGR CI shall log the termination of service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1665#B	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.
S-DMS-11050	B	The DIMGR CI shall ensure that databases which are distributed and replicated provide synchronized data.	IMS-0220#B	The IMS shall store, maintain and provide data management services for ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases.
S-DMS-11060	B	The DIMGR CI shall forward commands to terminate a session to all servers which are a part of that session.	IMS-1520#B	The IMS toolkit software shall provide data visualization tools to assist the investigators to perform the following functions, at a minimum: a. QA/Validation of products generated by the PGS b. Algorithm development c. Calibration functions, parameter verification, and anomaly detection d. View subsetted, subsampled, and summarized data whenever associated inventory information is displayed

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-11070	B	The DIMGR CI shall accept Subscriptions for DIM data.	IMS-0670#B	The IMS shall provide the capability to accept, validate, and fill orders from users for periodic delivery of information stored at the IMS.
S-DMS-20005	B	The DDICT CI shall provide access to Data Definitions of the following information at a minimum : a._Earth Science Data Types and services descriptions b._core metadata attribute definitions c._valid values d._synonyms for valid values e._product specific metadata	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20006	B	The DDICT CI shall store a mapping of geophysical parameters to the appropriate instruments and collections.	IMS-0510#B	The IMS shall provide tools for research planning and data search, to include at a minimum: a. Data acquisition schedules and plans b. The capability to map specified geophysical parameters to the appropriate instrument and/or Standard Product c. Descriptive information on instruments and geophysical parameters available in Standard Products d. Climatology information f. Geographic reference aids g. Spacecraft location projections.
S-DMS-20007	B	The DDICT CI shall provide the capability to search a mapping of geophysical parameters to the appropriate instruments and collections.	IMS-0510#B	The IMS shall provide tools for research planning and data search, to include at a minimum: a. Data acquisition schedules and plans b. The capability to map specified geophysical parameters to the appropriate instrument and/or Standard Product c. Descriptive information on instruments and geophysical parameters available in Standard Products d. Climatology information f. Geographic reference aids g. Spacecraft location projections.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20008	B	The DDICT CI shall store descriptive information about keywords associated with a collection, including at a minimum instruments and geophysical parameters.	IMS-0510#B	The IMS shall provide tools for research planning and data search, to include at a minimum: a. Data acquisition schedules and plans b. The capability to map specified geophysical parameters to the appropriate instrument and/or Standard Product c. Descriptive information on instruments and geophysical parameters available in Standard Products d. Climatology information f. Geographic reference aids g. Spacecraft location projections.
S-DMS-20009	B	The DDICT CI shall provide the capability to search descriptive information about keywords associated with a collection, including at a minimum instruments and geophysical parameters.	IMS-0510#B	The IMS shall provide tools for research planning and data search, to include at a minimum: a. Data acquisition schedules and plans b. The capability to map specified geophysical parameters to the appropriate instrument and/or Standard Product c. Descriptive information on instruments and geophysical parameters available in Standard Products d. Climatology information f. Geographic reference aids g. Spacecraft location projections.
S-DMS-20010	B	The DDICT CI shall store a conceptual schema of the data held in the SDSRV, LIMGR, and DIMGR to hide the underlying database structure from the end user.	IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20030	B	The DDICT CI shall provide the capability to view data dictionary entries based on the Earth Science Data Types accessible by an instance of the Data Server.	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20040	B	The DDICT CI shall provide the capability to view data dictionary entries based on the Earth Science Data Types accessible by an instance of the LIM	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20050	B	The DDICT CI shall provide the capability to view data dictionary entries based on the Earth Science Data Types accessible by an instance of the DIM.	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20060	B	The DDICT CI shall provide the capability to define a global view of data dictionary entries based on the Earth Science Data Types accessible by the ECS	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20070	B	The data dictionary support variations within data dictionary entries shall be based on data context and instrument.	IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
S-DMS-20080	B	The DDICT CI shall provide consistent view of data dictionary entries based on the value given for an attribute.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20090	B	The DDICT CI shall provide the capability to define data dictionary contexts based on science disciplines, site, and instrument.	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20110	B	The DDICT CI shall provide the capability to define a global data dictionary context.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20120	B	The DDICT CI shall maintain information describing the relationships between Earth Science Data Types.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20130	B	The DDICT CI shall have the capability to accept from the Workbench CI data dictionary search requests consisting of any combination of the following: Earth Science Data Types, Core Metadata attribute, and Product Specific Metadata in a format compatible with the Earth Science Query Language.	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0630#B	The IMS shall provide the capability to select metadata for retrieval by: a. Boolean operators b. Relational operators c. Attribute values d. Search strings e. Combinations thereof
			IMS-0650#B	The IMS shall query non-geographic metadata by any of the following criteria at a minimum: a. Exact word match b. Phrase match c. Character set (string) d. Wildcard construct (prefix, embedded, suffix) e. Character range f. Logical and Boolean operators g. Min/max range search h. Any combination of the above
S-DMS-20140	B	The DDICT CI shall have the capability to send to the Workbench CI: a._Earth Science data type descriptions b._core metadata attribute definitions, domains and synonyms c._product specific metadata attribute definitions, domains and synonyms.	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20160	B	The DDICT CI shall have the capability to accept from the SDSRV CI Data Server, Export Files, for the purposes of defining new or updated data dictionary entries	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20170	B	The DDICT CI shall have the capability to accept from the LIM CI, Export Files, for the purposes of defining new or updated data dictionary entries	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20180	B	The DDICT CI shall have the capability to accept from the DIM CI, Export Files, for the purposes of defining new or updated data dictionary entries	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20190	B	The DDICT CI shall maintain consistency of semantic relationships between its data dictionary entries and data server Schema information from which they were derived.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20200	B	The DDICT CI shall support additions, deletions and modifications to DDICT CI Schema.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
			IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information
S-DMS-20210	B	The DDICT CI shall use the identification of the user on whose behalf a Service Request is issued as the basis for access control decisions.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
S-DMS-20220	B	The DDICT CI data accesses shall be subject to access controls of read, write, update and delete, singly or in combination, based on user privileges.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0350#B	The IMS shall provide the capability for authorized personnel to add, delete, or modify ECS metadata entries, individually or in groups.
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
S-DMS-20230	B	The DDICT CI shall ensure that databases which are distributed and replicated provide synchronized data.	IMS-0220#B	The IMS shall store, maintain and provide data management services for ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases.
S-DMS-20240	B	The DDICT CI shall provide a capability to decompose the Search Requests it receives into executable data base Queries.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
			IMS-0575#B	The IMS shall provide the capability to search across multiple data sets for coincident occurrences of data in space and/or time and any other attribute(s) of metadata.
S-DMS-20250	B	The DDICT CI shall store, maintain and provide data management services for ECS data dictionary entries.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0220#B	The IMS shall store, maintain and provide data management services for ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20260	B	The DDICT CI shall support an administration utility for performance monitoring of system disk, memory, CPU and Input/Output.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-20270	B	The DDICT CI shall support an administration utility for performance monitoring of Service Requests processing.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
S-DMS-20280	B	The DDICT CI shall support an administration utility for performance tuning.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20290	B	The DDICT CI shall support an administration utility for administration of access control.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
S-DMS-20300	B	The DDICT CI shall support an administration utility for on-line full backup of Data Dictionary service data.	IMS-0220#B	The IMS shall store, maintain and provide data management services for ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases.
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
S-DMS-20310	B	The DDICT CI shall support an administration utility for on-line incremental backup of Data Dictionary service data.	IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20320	B	The DDICT CI shall support an administration utility for manual recovery of Data Dictionary data from system and media failures.	IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
S-DMS-20330	B	The DDICT CI shall support an administration utility for automatic recovery of DDICT CI data from system failures.	IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
S-DMS-20340	B	The DDICT CI shall support a data administration utility for data import.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20350	B	The DDICT CI shall support a data administration utility for data export.	IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
S-DMS-20355	B	The DDICT CI shall provide operations staff with the capability to generate daily DDICT operations summary reports.	IMS-1700#B	The IMS shall provide the capability to generate reports on: a. The backlog of data distribution requests b. The backlog of processing requests c. The backlog of data acquisition requests d. Data quality assessment e. Daily IMS operations summaries f. IMS performance summaries
S-DMS-20356	B	The DDICT CI shall provide operations staff with the capability to generate DDICT performance summary reports.	IMS-1700#B	The IMS shall provide the capability to generate reports on: a. The backlog of data distribution requests b. The backlog of processing requests c. The backlog of data acquisition requests d. Data quality assessment e. Daily IMS operations summaries f. IMS performance summaries
S-DMS-20360	B	The DDICT CI shall provide documents conforming to HTML3 standards.	IMS-0150#B	The IMS shall supply a uniform user interface for access to the following at a minimum: a. Heterogeneous data sets b. Communications networks c. Data bases that are geographically dispersed d. Multi-disciplined directories and inventories
			IMS-0535#B	The IMS shall support hierarchical searching of suitably structured documents.
S-DMS-20530	B	The DDICT CI shall support batch information management capabilities to add data dictionary entries.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20540	B	The DDICT CI shall support batch information management capabilities to update data dictionary entries.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
S-DMS-20550	B	The DDICT CI shall support batch information management capabilities to delete data dictionary entries.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20560	B	The DDICT CI shall support batch information management capabilities to retrieve data dictionary entries.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
S-DMS-20570	B	The DDICT CI shall support interactive information management capabilities to add data dictionary entries.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
S-DMS-20580	B	The DDICT CI shall support interactive information management capabilities to update data dictionary entries.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
S-DMS-20590	B	The DDICT CI shall support interactive information management capabilities to delete data dictionary entries.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
S-DMS-20600	B	The DDICT CI shall support interactive information management capabilities to retrieve data dictionary entries.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
S-DMS-20610	B	The DDICT CI shall maintain a log of all insertions, updates and deletions of data dictionary entries	IMS-0300#B	The IMS shall maintain a log of all information update activity.
S-DMS-20620	B	Standard Product related Metadata at the DDICT CI shall include keywords and glossary from investigators.	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20630	B	Standard Product related Metadata at the DDICT CI shall include of keywords, synonyms, and glossary for cross-product and cross-directory referencing.	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C
S-DMS-20640	B	The DDICT CI shall support the restart of database administration and maintenance activities which are unintentionally interrupted through system software or hardware failure, without loss of information.	IMS-0250#B	The IMS shall provide required maintenance of the IMS data bases, to include at a minimum: a. Capability to restructure the data base b. Capability to interrupt a maintenance session and restart the session without loss of information
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20660	B	The DDICT CI shall collect Security Management Data (such as rejected access to a service) and provide it to the MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-20670	B	The DDICT CI shall establish access controls of read, write, update and delete, singly or in combination, based on data types.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
			IMS-0350#B	The IMS shall provide the capability for authorized personnel to add, delete, or modify ECS metadata entries, individually or in groups.
			IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
S-DMS-20680	B	The DDICT CI shall establish access controls of read, write, update and delete, singly or in combination, based on data ownership.	IMS-0210#B	The IMS shall allow data access privileges to be configurable by user and data type for: a. Read b. Write c. Update d. Delete e. Any combination of the above
			IMS-0260#B	The IMS shall provide interactive and batch information management capabilities for authorized users to add, update, delete, and retrieve information from the IMS data bases.
			IMS-0350#B	The IMS shall provide the capability for authorized personnel to add, delete, or modify ECS metadata entries, individually or in groups.
			IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
S-DMS-20690	B	The DDICT CI shall provide the capability to add, delete, or modify dictionary entries to authorized users.	IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
			IMS-0350#B	The IMS shall provide the capability for authorized personnel to add, delete, or modify ECS metadata entries, individually or in groups.
			EOSD2400#B	ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.
S-DMS-20695	B	The DDICT CI shall be available 24 hours a day, 7 days a week within the constraints of the RMA requirements.	IMS-0010#B	The IMS shall be capable of providing 24 hour per day, 7 day per week access to the ECS services.
S-DMS-20700	B	The DDICT CI shall provide integration, testing, and simulation status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20710	B	The DDICT CI shall provide maintenance status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-20720	B	The DDICT CI shall provide logistics status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-20730	B	The DDICT CI shall provide training information to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-20735	B	The DDICT CI shall provide the capability to receive maintenance directives from the SMC.	IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
			SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
S-DMS-20740	B	The DDICT CI shall provide the capability to receive directives for integration, testing, and simulation from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-20750	B	The DDICT CI shall provide the capability to receive configuration management directives from the SMC.	IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
			SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
S-DMS-20760	B	The DDICT CI shall provide the capability to receive logistics management directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20770	B	The DDICT CI shall provide the capability to receive fault management directives from the SMC.	IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
			SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
S-DMS-20780	B	The DDICT CI shall provide the capability to receive security directives from the SMC.	SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.
			IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
S-DMS-20790	B	The DDICT CI shall provide the capability to receive training management directives from the SMC.	IMS-1630#B	The IMS shall provide the capability to receive from the SMC, directives to include at a minimum: a. Directives for integration, testing, and simulation b. Maintenance directives c. Configuration management directives d. Logistics management directives e. Training management directives f. Fault management directives g. Security directives
			SDPS0015#B	The SDPS shall receive directives on priorities and policy, including schedule conflict resolutions, from the SMC.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20795	B	The DDICT CI shall support operations staff in the creation of utilization reports, and the operations staff shall distribute them on a periodic basis to a predefined list of report recipients.	IMS-1680#B	The IMS status monitoring function shall provide the capability to distribute reports on a periodic basis to a predefined list of report recipients.
S-DMS-20796	B	The DDICT CI shall provide operations staff with the capability to distribute DDICT CI utilization reports electronically or in hard copy or on electronic media.	IMS-1690#B	The IMS status monitoring function shall provide the capability to disseminate reports on-line electronically and off-line on either paper or electronic media.
S-DMS-20820	B	The DDICT CI shall provide detected hardware and software fault information to MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
			IMS-1760#B	The IMS shall send detected hardware faults to the SMC, to include at a minimum: a. IMS processors b. IMS network interfaces c. Storage devices
S-DMS-20830	B	The DDICT CI shall provide configuration management data such as software versions to the MSS using the managed process framework.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-20835	B	The DDICT CI shall support the MSS in collecting Accounting Management Data by supplying resource utilization data.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20840	B	The DDICT CI shall report Accountability Management Data (requests such as searches, browse requests, orders) to the MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-20850	B	The DDICT CI shall collect Performance Management Data using the MSS managed object components and provide it to the MSS at configurable intervals and on demand.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-20860	B	The DDICT CI shall provide to MSS configuration information such as number of expected daily sessions, which will be used by MSS to compare plans to actuals (i.e. schedule management).	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-20865	B	The DDICT CI shall log to MSS the initiation of all Service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20866	B	The DDICT CI shall log the startup of the DDICT servers to MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-20867	B	The DDICT CI shall log the shutdown of the DDICT servers to MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-20868	B	The DDICT CI shall log to MSS when a service request is activated from the queue.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-20869	B	The DDICT CI shall log to MSS when a request has been successfully completed and the status is about to be returned to the client.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20870	B	The DDICT CI shall log to MSS the initiation of a session.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-20871	B	The DDICT CI shall log to MSS the suspension of a session.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-20872	B	The DDICT CI shall log to MSS the resumption of a previously suspended session.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-20873	B	The DDICT CI shall log to MSS the termination of a session.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-20880	B	The DDICT CI shall have the capability to recieve from the Data Administrator, Data Administration Requests	IMS-1195#B	The IMS shall validate DAR parameters against constraints provided by external instrument operations facilities (e.g. ASTER) as applicable and in accordance with applicable MOUs.
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20890	B	The DDICT CI shall provide maintaine Valid Values for data elements, where the data element has an enumerated set of values as a constraint.	IMS-0230#B	The IMS shall restrict update of ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases to authorized users based on the users access privileges.
			IMS-0350#B	The IMS shall provide the capability for authorized personnel to add, delete, or modify ECS metadata entries, individually or in groups.
			EOSD2400#B	ECS shall provide multiple categories of data protection based on the sensitivity levels of ECS data, as defined in NHB 2410.9.
S-DMS-20900	B	The DDICT CI shall maintain DAR parameters and DAR parameter constraints provided by EOC and External Instrument Operations Facilities (e.g. Landsat-7).	IMS-1190#B	The IMS shall validate DAR parameters against EOC and ICC provided constraints.
			IMS-1195#B	The IMS shall validate DAR parameters against constraints provided by external instrument operations facilities (e.g. ASTER) as applicable and in accordance with applicable MOUs.
S-DMS-20910	B	The DDICT CI shall provide access to the lists of the Valid Values for data elements, where the data element has an enumerated set of values as a constraint	IMS-0120#B	The IMS shall provide, dependent upon the user's display device capabilities, a user-friendly interface with the following features at a minimum: a. Multiple window display b. Buttons and pull down menus c. Valid lists for all variables d. An information base of associations between variables (e.g., between instruments and geophysical parameters) e. Ability to restore a session after interruption f. Context-sensitive help g. Minimal and consistent use of non-standard keys h. Random movement through fields i. Capability to save and restore the contents of a menu or form j. Standardized use of commands and terminology across screens k. Self-explanatory, meaningful error messages l. Automatic acronym expansion, which can be enabled and disabled interactively m. Availability of a menu tree diagram n. Command language

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-20920	B	The DDICT CI shall provide the capability to relate Phenomenological Search Criteria to Search Criteria containing values for searchable attributes supported in the Data Server Schema.	IMS-0510#B	The IMS shall provide tools for research planning and data search, to include at a minimum: a. Data acquisition schedules and plans b. The capability to map specified geophysical parameters to the appropriate instrument and/or Standard Product c. Descriptive information on instruments and geophysical parameters available in Standard Products d. Climatology information f. Geographic reference aids g. Spacecraft location projections.
S-DMS-20930	B	The DDICT CI shall have the capability to export Dependent Valids Values to the ESDIS IMS.	V0-0380#B	ECS shall have the capability to send and the ESDIS IMS team shall have the capability to receive Dependent Valids Information.
S-DMS-21000	B	The DDICT CI shall provide an application program interface for the submission of Service Requests.	EOSD5210#B	ECS shall enable development of a local user interface that accesses the core metadata and browse data base servers, bypassing the delivered "core" user interface. This server interface shall be configuration controlled and documented for the programmers' use.
S-DMS-21010	B	The DDICT CI shall provide an application program interface for the submission of requests for administrative services.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-21020	B	The DDICT CI shall contain a thesarus of data dictionary entries.	IMS-0320#B	Standard Product related metadata shall contain, at a minimum: a. Keywords and glossary from investigators b. Keywords, synonyms, and glossary for cross-product and cross-directory referencing c. Identifiers for locating products in the DADS archive by granule d. Documentation on algorithms, including version history, authors, written description of product, equations, and references e. Documentation on instrument(s) and spacecraft(s) including history of housekeeping and ancillary parameters, discipline characterization, calibration parameters, key individuals, and references f. Identifiers, algorithms, written descriptions, equations, authors, and references associated with static browse products and subsetted, subsampled, and summary data products g. Published papers, research results, significant results, and references by author and date h. Key organizations and personnel for all product-related DAACs, ADCs, and ODCs i. Granule-specific information as listed in Tables C-10 and C-11 in Appendix C

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-23910	B	The Data Dictionary shall maintain ASTER DAR parameters and ASTER DAR parameter constraints provided by the ASTER instrument operations facilities.	IMS-1195#B	The IMS shall validate DAR parameters against constraints provided by external instrument operations facilities (e.g. ASTER) as applicable and in accordance with applicable MOUs.
S-DMS-30060	B	The GTWAY CI shall provide the capability to establish sessions as the contxt for a series of service requests.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-30070	B	The GTWAY CI shall provide the capability to suspend an on-going session.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-30080	B	The GTWAY CI shall provide the capability to resume a previously suspended session.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-30090	B	The GTWAY CI shall provide the capability to terminate an established session.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-30100	A	The GTWAY CI shall be available 24 hours a day, 7 days a week within the constraints of the RMA requirements.	IMS-0010#B	The IMS shall be capable of providing 24 hour per day, 7 day per week access to the ECS services.
			IMS-0010#A	The IMS shall be capable of providing 24 hour per day, 7 day per week access to the ECS services.
S-DMS-30110	B	The GTWAY CI shall provide the capability to save the result of a Service Request for later reuse.	IMS-0190#B	The IMS shall provide the capability to save information selected in prior metadata searches for use in subsequent IMS service requests, either in the current session or in future sessions.
S-DMS-30120	B	The GTWAY CI shall, upon request, provide the current Result Set (complete or incomplete) to the client or specified destination.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-30130	B	The GTWAY CI shall provide the capability to terminate processing of active or suspended service requests.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-30140	B	The GTWAY CI shall provide the capability to suspend processing of active service requests.	IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
			IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-30150	B	The GTWAY CI shall provide the capability to resume processing of a previously suspended service request.	IMS-0550#B	The IMS shall allow a user to locate and identify desired data without detailed knowledge of the ECSs: a. Architecture b. Data Base management system c. Data Base structure d. Query languages e. Data formats
			IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-30160	B	The GTWAY CI shall provide a capability to estimate the resources required to execute a pending Service request.	IMS-0560#B	The IMS shall decompose complex data base search requests into executable data base queries in a manner which is transparent to the user.
S-DMS-30260	B	The GTWAY CI shall provide a capability to report the status of service requests submitted to it.	IMS-1300#B	The IMS shall be capable of responding to user inquiries for status of user-initiated requests, and user request history.
S-DMS-30310	B	The GTWAY CI shall have the capability to send Inventory Search Requests to the Version 0 IMS using Version 0 system protocols.	IMS-0625#B	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
			V0-0060#B	The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Inventory Search Requests via V0 protocols.
S-DMS-30320	B	The GTWAY CI shall have the capability to receive Inventory Search Results from the Version 0 IMS using Version 0 system protocols.	V0-0070#B	The ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive Inventory Search Results via V0 protocols.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0625#B	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
S-DMS-30340	B	The GTWAY CI shall have the capability to send Browse Requests to the Version 0 IMS using Version 0 system protocols.	IMS-0625#B	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
			V0-0100#B	The ECS shall have the capability to send and the ESDIS V0 IMS shall have the capability to receive Browse Requests via V0 protocols.
			V0-0110#B	The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive and Browse Results via V0 protocols.
S-DMS-30345	B	The GTWAY CI shall have the capability to receive Browse Results from the V0 IMS using Version 0 protocols.	V0-0110#B	The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive and Browse Results via V0 protocols.
S-DMS-30350	B	The GTWAY CI shall have the capability to send Product Requests to the Version 0 IMS using Version 0 system protocols.	V0-0120#B	The ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Product Requests via V0 protocols.
			IMS-0625#B	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
			IMS-0915#B	The IMS shall provide an interface to the Version 0 system for ordering data products to be delivered directly to the user, or as specified in ICDs.
			IMS-1290#B	The IMS shall send a product order to an ADC or an ODC with the identification of the destination DADS and suggested shipping deadline for data required for product processing.
S-DMS-30360	A	The GTWAY CI shall have the capability to receive Inventory Search Requests from the Version 0 IMS using Version 0 system protocols.	IMS-0625#B	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
			IMS-0625#A	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			V0-0150#A	ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Inventory Search Requests via V0 protocols.
			V0-0150#B	ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Inventory Search Requests via V0 protocols.
S-DMS-30370	A	The GTWAY CI shall have the capability to send Inventory Search Results to the Version 0 IMS using Version 0 system protocols.	V0-0160#A	ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Inventory Search Results via V0 protocols.
			V0-0160#B	ECS shall have the capability to send and ESDIS V0 IMS shall have the capability to receive Inventory Search Results via V0 protocols.
			IMS-0625#B	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
			IMS-0625#A	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
S-DMS-30380	A	The GTWAY CI shall have the capability to receive Browse Requests from the Version 0 IMS using Version 0 system protocols.	IMS-0625#B	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
			IMS-0625#A	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
			V0-0190#A	V0 ESDIS IMS shall have the capability to send and ECS shall have the capability to receive Browse Requests [implementation issue 2].
			V0-0190#B	V0 ESDIS IMS shall have the capability to send and ECS shall have the capability to receive Browse Requests [implementation issue 2].
S-DMS-30400	A	The GTWAY CI shall have the capability to receive Product Requests from the Version 0 IMS using Version 0 system protocols.	V0-0230#A	The ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive Product Requests via V0 protocols.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			V0-0230#B	The ESDIS V0 IMS shall have the capability to send and ECS shall have the capability to receive Product Requests via V0 protocols.
			IMS-0625#B	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
			IMS-0625#A	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
S-DMS-30500	A	The GTWAY CI shall provide for the submission of Service Requests.	IMS-0390#A	The IMS shall maintain or provide access to directory entries for all data sets accessible through the IMS search and order service.
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-30505	A	The GTWAY CI shall provide for the return of Service Requests results.	IMS-0390#A	The IMS shall maintain or provide access to directory entries for all data sets accessible through the IMS search and order service.
S-DMS-30510	A	The GTWAY CI shall provide an application program interface for the submission of requests for administrative services.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-30520	A	The GTWAY CI shall provide utilities which extract from the Data Dictionary the information needed by the V0 Client, in the format expected by the V0 Client.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-30540	A	The GTWAY CI shall provide the capability to translate Version 0 system protocol into ECS system protocols.	IMS-0870#B	The IMS shall provide access in accordance with MOUs to ADC and ODC data that a. Has been generated by ADC and ODC data systems b. Is stored by ADC and ODC archives and requested by EOSDIS users c. Is required as ancillary data for production processing
			IMS-0870#A	The IMS shall provide access in accordance with MOUs to ADC and ODC data that b. Is stored by ADC and ODC archives and requested by EOSDIS users c. Is required as ancillary data for production processin
S-DMS-30550	B	The GTWAY CI shall provide the capability to translate ECS system protocols into Version 0 system protocol.	IMS-0870#B	The IMS shall provide access in accordance with MOUs to ADC and ODC data that a. Has been generated by ADC and ODC data systems b. Is stored by ADC and ODC archives and requested by EOSDIS users c. Is required as ancillary data for production processing
S-DMS-30560	B	The GTWAY CI shall support two-way Level 2 or 3 catalog interoperability, as defined by the CEOS, for the interface between the ECS and the NOAA SAAs.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30570	B	The GTWAY CI shall support two-way Level 3 catalog interoperability, as defined by the CEOS, for the interface between the ECS and V0.	IMS-0625#B	The IMS shall provide bi-directional interoperability between ECS and V0 for access to the inventory metadata, guide information, and browse products via level III catalog interoperability as specified in ICDs.
S-DMS-30600	B	The GTWAY CI shall have the capability to send User Authentication Requests to the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30610	B	The GTWAY CI shall have the capability to receive User Authentication Information from the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30620	B	The GTWAY CI shall have the capability to receive User Authentication Requests from the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30630	B	The GTWAY CI shall have the capability to send User Authentication Information to the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30640	B	The GTWAY CI shall have the capability to receive Inventory Search Requests from the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30650	B	The GTWAY CI shall have the capability to send Inventory Search Results to the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30660	B	The GTWAY CI shall have the capability to send Inventory Search Requests to the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30670	B	The GTWAY CI shall have the capability to receive Inventory Search Results from the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30680	B	The GTWAY CI shall have the capability to receive Browse Requests from the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30690	B	The GTWAY CI shall have the capability to send Browse Requests to the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30695	B	The GTWAY CI shall have the capability to receive Browse Results from the NOAA SAAs using Version 0 system protocols.	NOAA0300#B	The SAAs shall have the capability to send and the ECS shall have the capability to receive Browse Results.
S-DMS-30700	B	The GTWAY CI shall have the capability to send Product Requests to the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-30710	B	The GTWAY CI shall have the capability to receive Product Delivery Status from the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30720	B	The GTWAY CI shall have the capability to send Product Delivery Status Requests to the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30730	B	The GTWAY CI shall have the capability to receive Product Requests from the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
			IMS-0780#B	The IMS shall accept and validate from the ECS users, IPs, ADCs, and ODCs requests for ECS archival data products.
S-DMS-30740	B	The GTWAY CI shall have the capability to send Product Delivery Status to the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30750	B	The GTWAY CI shall have the capability to receive Product Delivery Status Requests from the NOAA SAAs using Version 0 system protocols.	IMS-0620#B	The IMS shall provide access to inventories of selected ODCs and ADCs via level II and level III catalog interoperability as specified in ICDs.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0860#B	The IMS shall provide an interface to ADC and ODC data systems and archives that produce, process, and/or maintain Earth science data sets and that have agreed to make the information and services available to ECS.
S-DMS-30760	B	The GTWAY CI shall provide partial results upon request which consists of the results from the start of the request or since the last request for results.	IMS-0665#B	The IMS shall provide informational messages to indicate that a query is being executed, and shall provide the capability for the user to abort any time-intensive operations.
S-DMS-30800	B	The GTWAY CI shall be able to provide notification of events associated with sessions which require additional instructions, e.g., when requests exceed a specified threshold.	IMS-0100#B	The IMS shall support, at a minimum: a. Interactive sessions b. Non-interactive remote sessions c. Client-server interface d. Simulated sessions for training purposes
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30805	B	The GTWAY CI shall be able to provide notification of events associated with Service requests which require additional instructions, e.g., when resources for a request exceed a specified threshold.	IMS-0100#B	The IMS shall support, at a minimum: a. Interactive sessions b. Non-interactive remote sessions c. Client-server interface d. Simulated sessions for training purposes
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30810	B	The GTWAY CI shall provide an entry point to be used to respond to notifications of events which require instructions to be returned to the LIM CI.	IMS-0100#B	The IMS shall support, at a minimum: a. Interactive sessions b. Non-interactive remote sessions c. Client-server interface d. Simulated sessions for training purposes

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30820	B	The GTWAY CI shall provide the capability to accept and utilize the entry point to be used for asynchronous notification in asynchronous Service Requests.	IMS-0100#B	The IMS shall support, at a minimum: a. Interactive sessions b. Non-interactive remote sessions c. Client-server interface d. Simulated sessions for training purposes
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30830	B	The GTWAY CI shall provide the capability to disable asynchronous notifications, and provide default instructions for such notification events.	IMS-0100#B	The IMS shall support, at a minimum: a. Interactive sessions b. Non-interactive remote sessions c. Client-server interface d. Simulated sessions for training purposes
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30840	B	The GTWAY CI shall be able to accept notifications of events associated with sessions it has with other services.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30845	B	The GTWAY CI shall be able to accept notifications of events associated with Service requests it issued to other services.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-30850	B	The GTWAY CI shall provide a capability to accept instructions associated with responses to notifications of events.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30860	B	The GTWAY CI shall provide a capability to report the status of sessions established by it.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30870	B	The GTWAY CI shall automatically suspend sessions that have been inactive for a specified time.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30890	B	The GTWAY CI shall support multiple concurrent sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30900	B	The GTWAY CI shall support multiple service requests within a session.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30910	B	The GTWAY CI shall log the initiation of a session.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-30920	B	The GTWAY CI shall log the termination of a session.	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30930	B	The GTWAY CI shall log the suspension of a session.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-30940	B	The GTWAY CI shall log the resumption of previously suspended	IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
			IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-30950	B	The GTWAY CI shall provide the capability for the operations staff to specify a "time-out" period for inactive sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30960	B	The GTWAY CI shall provide the capability for the operations staff to suspend all active sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30970	B	The GTWAY CI shall provide the capability for the operations staff to resume any or all sessions, previously suspended by operations staff or clients.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30980	B	The GTWAY CI shall provide the capability for the operations staff to terminate any or all active or suspended sessions.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.
S-DMS-30990	B	The GTWAY CI shall send Notifications to users via email in the event that a users's request or session is canceled by operations staff.	IMS-0140#B	The IMS shall provide the capability for multiple simultaneous sessions – for example, the capability to transition back and forth smoothly between directory search, inventory search, and data visualization. For example, when viewing a directory entry, the user shall have easy access to the corresponding guide (documentation/reference material) and inventory information.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-31000	B	The GTWAY CI shall provide the capability to restore a session after interruption.	IMS-0120#B	The IMS shall provide, dependent upon the user's display device capabilities, a user-friendly interface with the following features at a minimum: a. Multiple window display b. Buttons and pull down menus c. Valid lists for all variables d. An information base of associations between variables (e.g., between instruments and geophysical parameters) e. Ability to restore a session after interruption f. Context-sensitive help g. Minimal and consistent use of non-standard keys h. Random movement through fields i. Capability to save and restore the contents of a menu or form j. Standardized use of commands and terminology across screens k. Self-explanatory, meaningful error messages l. Automatic acronym expansion, which can be enabled and disabled interactively m. Availability of a menu tree diagram n. Command language
S-DMS-31010	A	The GTWAY CI shall log to MSS the initiation of all Service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1665#B	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.
			IMS-1650#A	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1665#A	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-31011	B	The GTWAY CI shall log the startup of the GTWAY servers to MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-31012	B	The GTWAY CI shall log the shutdown of the GTWAY servers to MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-31013	B	The GTWAY CI shall log to MSS when a service request is activated from the queue.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-31014	B	The GTWAY CI shall log to MSS when a service request has been successfully decomposed into its component requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-31015	B	The GTWAY CI shall log to MSS when an external connection to the V0 IMS server has been established.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-31016	B	The GTWAY CI shall log to MSS when the component service request has been submitted to the V0 IMS server.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories
S-DMS-31017	B	The GTWAY CI shall log to MSS when the request to the V0 IMS server has been successfully returned.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-31018	B	The GTWAY CI shall log to MSS when the results of the request has been integrated and status is about to be sent to the client program.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
S-DMS-31020	B	The GTWAY CI shall log the suspension of processing of Service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1665#B	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.
S-DMS-31030	B	The GTWAY CI shall log the resumption of previously suspended Service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1665#B	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.
S-DMS-31040	A	The GTWAY CI shall log the termination or successful completion of service requests.	IMS-1650#B	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests
			IMS-1665#B	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.
			IMS-1650#A	MS operations data shall contain information on: a. System utilization at the IMS b. Outstanding data distribution requests c. Outstanding processing requests d. Outstanding data acquisition requests

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			IMS-1665#A	he IMS shall provide to the SMC, IMS services usage by each user (to include at a minimum user name, IMS service identification, date/time stamp, time expended, facilities used) for later reporting and determination of access patterns.
S-DMS-31050	B	The GTWAY CI shall ensure that databases which are distributed and replicated provide synchronized data.	IMS-0220#B	The IMS shall store, maintain and provide data management services for ECS directory, inventory, and guide (documentation/reference material) and other IMS data bases.
S-DMS-31050	B	The GTWAY CI shall report Accountability Management Data (requests such as searches, browse requests, orders) to the MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-31051	B	The GTWAY CI shall send detected hardware and software fault information to MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
			IMS-1760#B	The IMS shall send detected hardware faults to the SMC, to include at a minimum: a. IMS processors b. IMS network interfaces c. Storage devices
S-DMS-31052	B	The GTWAY CI shall provide configuration management data such as software versions to MSS using managed process framework.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-31053	B	The GTWAY CI shall collect Performance Management Data using the MSS managed object components and provide it to the MSS at configurable intervals and on demand.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-31054	B	The GTWAY CI shall collect Security Management Data (such as rejected access to a service) and provide it to the MSS.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-31056	B	The GTWAY CI shall support the MSS in collecting Accounting Management Data by supplying resource utilization data.	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
			IMS-1660#B	The IMS shall provide to the SMC a full and complete history of all IMS resources used by science investigators including, at a minimum: a. CPU utilization b. Amount of user storage c. Connect time d. Session histories

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-31057	B	The GTWAY CI shall provide to MSS configuration information such as number of expected daily sessions, which will be used by MSS to compare plans to actuals (i.e. schedule management).	IMS-1620#B	The IMS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management
S-DMS-31058	B	The GTWAY CI shall provide integration, testing, and simulation status to the MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-31059	B	The GTWAY CI shall provide maintenance status to the MSS.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-31060	B	The GTWAY CI shall have the capability to send Cost Estimate Requests to the NOAA SAAs using Version 0 protocols.	NOAA0300#B	The SAAs shall have the capability to send and the ECS shall have the capability to receive Browse Results.
			NOAA0330#B	The ECS shall have the capability to send and the SAAs shall have the capability to receive Cost Estimate Requests.
S-DMS-31061	B	The GTWAY CI shall provide training information to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information
S-DMS-31062	B	The GTWAY CI shall provide logistics status to the SMC.	IMS-1640#B	The IMS shall provide to the SMC, status to include at a minimum: a. Integration, testing, and simulation status b. Maintenance status c. Logistics status d. Training information

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-31090	B	The GTWAY CI shall have the capability to receive Cost Estimate Requests from the NOAA SAAs using Version 0 protocols.	NOAA0340#B	The SAAs shall have the capability to send and the ECS shall have the capability to receive Cost Estimates.
S-DMS-31100	B	The GTWAY CI shall have the capability to send Guide queries to the NOAA SAAs using Version 0 protocols.	NOAA0210#B	The ECS shall have the capability to send and the SAAs shall have the capability to receive Guide Queries.
S-DMS-31120	B	The GTWAY CI shall have the capability to send Guide query results to the NOAA SAAs using Version 0 protocols.		
S-DMS-31140	B	The GTWAY CI shall have the capability to send Ancillary Data Requests to the NOAA NMC using Version 0 protocols.	NOAA0700#B	The ECS shall have the capability to send and the NMC shall have the capability to receive requests for ancillary data to support ECS standard product generation.
S-DMS-31150	B	The GTWAY CI shall have the capability to send Product Availability Queries to the NOAA NMC using Version 0 protocols.	NOAA0720#B	The ECS shall have the capability to send and the NMC shall have the capability to receive Product Availability Queries.
S-DMS-31160	B	The GTWAY CI shall have the capability to send Guide Search Requests to the V0 IMS using Version 0 protocols.	V0-0080#B	The ECS shall have the capability to send and the ESDIS V0 IMS shall have the capability to receive Guide Search Requests via V0 protocols.
S-DMS-31190	B	The GTWAY CI shall have the capability to receive Guide Search Results from the V0 IMS using Version 0 protocols.	V0-0090#B	The ESDIS V0 IMS shall have the capability to send and the ECS shall have the capability to receive Guide Search Results via V0 protocols.
S-DMS-32000	B	The GTWAY CI shall support operations staff in the creation of utilization reports, and the operations staff shall distribute them on a periodic basis to a predefined list of report recipients.	IMS-1680#B	The IMS status monitoring function shall provide the capability to distribute reports on a periodic basis to a predefined list of report recipients.
S-DMS-32001	B	The GTWAY CI shall provide operations staff with the capability to distribute GTWAY CI utilization reports electronically or in hard copy or on electronic media.	IMS-1690#B	The IMS status monitoring function shall provide the capability to disseminate reports on-line electronically and off-line on either paper or electronic media.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-32010	B	The GTWAY CI shall provide operations staff with the capability to generate daily GTWAY operations summary reports.	IMS-1700#B	The IMS shall provide the capability to generate reports on: a. The backlog of data distribution requests b. The backlog of processing requests c. The backlog of data acquisition requests d. Data quality assessment e. Daily IMS operations summaries f. IMS performance summaries
S-DMS-32011	B	The GTWAY CI shall provide operations staff with the capability to generate GTWAY performance summary reports.	IMS-1700#B	The IMS shall provide the capability to generate reports on: a. The backlog of data distribution requests b. The backlog of processing requests c. The backlog of data acquisition requests d. Data quality assessment e. Daily IMS operations summaries f. IMS performance summaries
S-DMS-60010	A	The electrical power requirements for DMGHW CI equipment shall be in accordance with the ECS Facilities Plan (DID 302/DV2).	SDPS0120#B	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
			SDPS0120#A	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
S-DMS-60020	A	The air conditioning requirements for the DMGHW CI equipment shall be in accordance with the ECS Facilities Plan (DID 302/DV2).	SDPS0120#A	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
			SDPS0120#B	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
S-DMS-60030	A	The grounding requirements for DMGHW CI equipment shall be in accordance with ECS Facilities Plan (DID 302/DV2).	SDPS0120#B	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
			SDPS0120#A	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
S-DMS-60040	A	The fire alarm requirements for DMGHW CI equipment shall be in accordance with ECS Facilities Plan (DID 302/DV2).	SDPS0120#A	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
			SDPS0120#B	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-60050	A	The acoustical requirements for DMGHW CI equipment shall be in accordance with ECS Facilities Plan (DID 302/DV2).	SDPS0120#B	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
			SDPS0120#A	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
S-DMS-60060	A	The physical interface requirements between DMGHW CI equipment and the facility shall be in accordance with ECS Facilities Plan (DID 302/DV2).	SDPS0120#A	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
			SDPS0120#B	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
S-DMS-60070	A	The footprint size and the physical layout of DMGHW CI equipment shall be in accordance with the ECS Facilities Plan (DID 302/DV2).	SDPS0120#B	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
			SDPS0120#A	The SDPS shall be capable of operating in a 24-hour a day, 7-day a week mode.
S-DMS-60110	A	The operating system for each Unix platform in the DMGHW CI shall conform to the POSIX.2 standard.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-60120	A	The DMGHW CI POSIX.2 compliant platform shall have the following utilities installed at a minimum: perl, emacs, gzip, tar, imake, prof, gprof, nm.	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-60130	A	The DMGHW CI POSIX.2 compliant platform shall have the following POSIX.2 user Portability Utilities installed at a minimum: man, vi.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-60140	A	The DMGHW CI POSIX.2 compliant platform shall have the following POSIX.2 Software Development Utilities installed at a minimum: make.	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-60150	A	The DMGHW CI POSIX.2 compliant platform shall have the following POSIX.2 C-Language Development Utilities installed at a minimum: lex, yacc.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-60160	A	The DMGHW CI POSIX.2 compliant platform shall have the following Unix shells installed at a minimum: C shell, Bourne shell, Korn shell.	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-60170	A	The DMGHW CI POSIX.2 compliant platform shall have on-line documentation or printed documentation for each installed tool.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-60180	A	The DMGHW CI POSIX.2 compliant platform shall have installed one or more development environment supporting the following languages: a. C b. FORTRAN-77	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-60190	A	Each development environment associated with the POSIX.2 compliant platform in the DMGHW CI shall have the capability to compile and link strictly conformant POSIX-compliant source code.	EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-60195	A	Each development environment associated with the POSIX.2 compliant platform in the DMGHW CI shall have an interactive source level debugger for ECS supported languages.	EOSD5020#A	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
			EOSD5020#B	ECS software, hardware, and interfaces shall enable transparent portability across heterogeneous site architectures, i.e. performing the same function at different ECS sites that may have different hardware implementations.
S-DMS-60200	B	The DMGHW CI shall provide local storage as defined in Appendix E (Section E.8, Table E-9) of the current version of 304-CD-005.	IMS-1790#B	The IMS shall provide, based upon the data model defined in Appendix C, sufficient storage for, at a minimum: a. Directory metadata b. Guide (documentation/reference material) metadata c. Inventory metadata d. System space, LSM data, and data base system overhead e. Metadata staging area f. Spacecraft housekeeping and ancillary data metadata g. Science processing library software metadata h. Summary data statistics i. User workspace

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-60300	A	The DMGHW CI shall be configured to support the SDPS function of information searches on the ECS directory's availability requirement of .993 and a mean down time (MDT) requirement of < 2 hours during times of staffed operations.	IMS-1785#B	The IMS performance specified in Table 7-4 shall be maintained during other IMS operational activities such as database updates from the DADS.
			EOSD3940#A	The SDPS function of Information Searches on the ECS Directory shall have an operational availability of 0.993 at a minimum (.9997 design goal) and an MDT of two (2) hours or less (1.4 hour design goal).
			IMS-0240#B	The IMS shall provide, at a minimum, data base administration utilities for: a. Modifying the data base schema b. Performance monitoring c. Performance tuning d. Administration of user access control e. On-line incremental backup f. On-line recovery g. Export/import of data
S-DMS-60360	A	The DMGHW CI shall be configured to support the SDPS function of User Interfaces to Client, Interoperability, Data Server, and Data Management (IMS) services at Individual DAAC Site's availability requirement of .993 and a mean down time requirement of < 2 hours during times of staffed operations.	EOSD3930#B	The user interfaces to Information Management System (IMS) services at individual Distributed Active Archive Center (DAAC) sites shall have an operational availability of 0.993 at a minimum (.9997 design goal) and an MDT of two (2) hours or less (1.6 hour design goal).
			EOSD3930#A	The user interfaces to Information Management System (IMS) services at individual Distributed Active Archive Center (DAAC) sites shall have an operational availability of 0.993 at a minimum (.9997 design goal) and an MDT of two (2) hours or less (1.6 hour design goal).
S-DMS-60370	A	The DMGHW CI shall be configured to support the SDPS function of Metadata Ingest and Update's availability requirement of .96 and a mean down time requirement of < 4 hours during times of staffed operations.	EOSD3960#A	The SDPS function of Metadata Ingest and Update shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
			EOSD3960#B	The SDPS function of Metadata Ingest and Update shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
S-DMS-60380	A	The DMGHW CI shall be configured to support the SDPS function of Local Data Order Submission's availability requirement of .96 and a mean down time requirement of < 4 hours during times of staffed operations.	EOSD3980#B	The SDPS function of Local Data Order Submission shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
			EOSD3980#A	The SDPS function of Local Data Order Submission shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
S-DMS-60390	A	The DMGHW CI shall be configured to support the SDPS function of Data Order Submission Across DAAC's availability requirement of .96 and a mean down time requirement of < 4 hours during times of staffed operations.	EOSD3990#A	The SDPS function of Data Order Submission Across DAACs shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
			EOSD3990#B	The SDPS function of Data Order Submission Across DAACs shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
S-DMS-60400	A	The DMGHW CI shall be configured to support the SDPS function of Client, Interoperability, Data Management and Data Server (IMS) Data Base Management and Maintenance Interface's availability requirement of .96 and a mean down time requirement of < 4 hours during times of staffed operations.	EOSD4000#B	The SDPS function of IMS Data Base Management and Maintenance Interface shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).
			EOSD4000#A	The SDPS function of IMS Data Base Management and Maintenance Interface shall have an operational availability of 0.96 at a minimum (.999999 design goal) and an MDT of four (4) hours or less (6 minutes design goal).

Data Management Subsystem L4 to RbR traceability

L4 ID	Rel	L4 Text	RbR ID	RbR Text
S-DMS-60410	A	The DMGHW CI elements and components shall include the on-line (operational mode) and off-line (test mode) fault detection and isolation capabilities required to achieve the specified operational availability requirements.	EOSD4100#A	The ECS segments, elements, and components shall include the on-line (operational mode) and off-line (test mode) fault detection and isolation capabilities required to achieve the specified operational availability requirements.
			EOSD4100#B	The ECS segments, elements, and components shall include the on-line (operational mode) and off-line (test mode) fault detection and isolation capabilities required to achieve the specified operational availability requirements.
S-DMS-60420	A	The maximum down time of the DMGHW CI shall not exceed twice the required MDT in 99 percent of failure occurrences.	EOSD3630#B	The maximum down time shall not exceed twice the required MDT in 99 percent of failure occurrences.
			EOSD3630#A	The maximum down time shall not exceed twice the required MDT in 99 percent of failure occurrences.

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